AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-57. (Canceled)

Claim 58. (Previously Presented) A vector comprising:

(a) a first promoter operably linked to an exon defined at its 3' end by an unpaired splice donor site, and

(b) a second promoter operably linked to a sequence encoding a selectable marker that lacks an operably-linked polyadenylation signal;

wherein said first and second promoters are present in said vector in the same orientation, wherein both first and second promoters function in a eukaryotic cell and wherein said exon lacks a translational start codon or contains a translational start codon that is not operably linked to a translational stop codon.

Claims 59-60. (Canceled)

Claim 61. (Previously Presented) The vector of claim 58, wherein said vector is linear and wherein said second promoter is located 5' to said unpaired splice donor site.

Claim 62-63. (Canceled)

Claim 64. (Previously Presented) The vector of claim 58, wherein when said exon comprises a translation start codon, said exon also comprises a signal secretion sequence operably linked to said translation start codon.

Claim 65. (Previously Presented) A vector comprising a first promoter and a second promoter, said first and second promoters being oriented in the same direction, wherein:

(a) said first promoter, but not said second promoter, is operably linked to an exon defined at its 3' end by an unpaired splice donor site; and

(b) said vector comprises no operably-linked polyadenylation signals downstream of either said first promoter or said second promoter and wherein both first and second promoters function in a eukaryotic cell.

Claim 66. (Previously Presented) The vector of claim 65, wherein said vector is linear and wherein said second promoter is located 3' to said first promoter.

Claims 67-69. (Canceled)

Claim 70. (Previously Presented) A vector comprising:

(a) a first promoter operably linked to a sequence encoding a positive selectable marker;

(b) a second promoter operably linked to a sequence encoding a negative selectable marker; and

(c) an unpaired splice donor site,

wherein said splice donor site is 5′ to said negative selectable marker and when said vector is integrated into the genome of a eukaryotic host cell and the vector-encoded splice donor is spliced to a splice acceptor in an endogenous gene in said genome, then said positive selectable marker sequence is expressed in active form and said negative selectable marker sequence is not expressed.

Claim 71. (Previously Presented) The vector of claim 70, further comprising a third promoter operably linked to a second unpaired splice donor site.

Claim 72. (Previously Presented) The vector of any one of claims 58, 65, 70, or 71, said vector further comprising one or more transposition signals.

Claim 73. (Previously Presented) The vector of any one of claims 58, 65, 70, or 71, said vector further comprising sequences encoding one or more amplifiable markers.

Claim 74. (Previously Presented) The vector of any one of claims 58, 65, 70, or 71, said vector further comprising one or more viral origins of replication.

Claim 75. (Previously Presented) The vector of any one of claims 58, 65, 70, or 71, said vector further comprising one or more viral replication factor genes.

Claim 76. (Previously Presented) The vector of claim 73, wherein said amplifiable marker is selected from the group consisting of dihydrofolate reductase, adenosine deaminase, aspartate transcarbamylase, dihydro-orotase, and carbamyl phosphate synthase.

Claim 77. (Previously Presented) The vector of claim 74, wherein said viral origin of replication is selected from the group consisting of Epstein Barr virus ori P and SV40 ori.

Claim 78. (Previously Presented) The vector of any one of claims 58, 65, 70, or 71, said vector further comprising genomic DNA.

Claim 79. (Previously Presented) A eukaryotic host cell *in vitro* comprising the vector of any one of claims 58, 65, 70, or 71.

Claim 80. (Previously Presented) A eukaryotic host cell *in vitro* comprising the vector of claim 72.

Claim 81. (Previously Presented) A eukaryotic host cell *in vitro* comprising the vector of claim 73.

Claim 82. (Previously Presented) A eukaryotic host cell *in vitro* comprising the vector of claim 74.

Claim 83. (Previously Presented) A eukaryotic host cell *in vitro* comprising the vector of claim 75.

Claim 84. (Previously Presented) A eukaryotic host cell *in vitro* comprising the vector of claim 78.

Claim 85. (Previously Presented) The eukaryotic host cell of claim 79, wherein said host cell is an isolated cell.

Claim 86. (Previously Presented) The eukaryotic host cell of any one of claims 80-85, wherein said host cell is an isolated cell.

Claim 87. (Previously Presented) A library of eukaryotic cells *in vitro*comprising the vector of any one of claims 58, 65, 70, or 71.

Claim 88. (Previously Presented) A library of eukaryotic cells *in vitro* comprising the vector of claim 72.

Claim 89. (Previously Presented) A library of eukaryotic cells *in vitro* comprising the vector of claim 73.

Claim 90. (Previously Presented) A library of eukaryotic cells *in vitro* comprising the vector of claim 74.

Claim 91. (Previously Presented) A library of eukaryotic cells *in vitro* comprising the vector of claim 75.

Claim 92. (Previously Presented) A library of eukaryotic cells *in vitro* comprising the vector of claim 78.

Claim 93. (Currently Amended) A method for activating transcription of an endogenous gene in a eukaryotic cell *in vitro* comprising:

(a) transfecting a eukaryotic cell *in vitro* with the vector of any one of claims 58, 65, 70, or 71; and

(b) culturing said cell under conditions suitable for non-homologous integration of said vector into the genome of said cell, wherein said integration results in the activation of transcription of an endogenous gene, in the genome of said cell, by means of a promoter in said vector.

Claim 94. (Previously Presented) A method for obtaining cDNA from an endogenous gene comprising:

(a) transfecting a plurality of eukaryotic cells *in vitro* with the vector of any one of claims 58, 65, 70, or 71;

(b) culturing said cells under conditions suitable for non-homologous integration of the vector into the genome of the cell;

(c) selecting for cells in which said vector has integrated into the genomes of said cells;

(d) isolating RNA from said selected cells;

(e) producing cDNA from said isolated RNA; and

(f) isolating one or more cDNA molecules containing one or more nucleotide sequences from said vector.

Claim 95. (Previously Presented) The method of claim 94, wherein said isolation in step (f) is accomplished by hybridizing said cDNA in step (e) to said vector.

Claim 96. (Previously Presented) The method of claim 94, wherein said cDNA in step (e) or (f) is sequenced and the nucleotide sequence of said sequenced cDNA is compared to nucleotide sequence in said vector.

Claims 97-99. (Canceled)

Claim 100. (Previously Presented) A method for isolating exon I of a gene comprising:

(a) transfecting one or more eukaryotic cells *in vitro* with the vector of any one of claims 58, 61, or 65;

(b) culturing said cells under conditions suitable for non-homologous integration of the vector into the genome of said cells;

(c) selecting for cells in which said vector has transcriptionally activated an endogenous gene containing one or more exons;

(d) isolating RNA from said selected cells;

(e) producing cDNA from said isolated RNA;

(f) recovering a cDNA molecule containing vector sequence and exon sequence from said endogenous gene; and

(g) using the exon sequence in the endogenous gene in (f) to obtain a cellular transcript or cDNA of a cellular transcript that contains the endogenous gene exon sequence and exon I of the endogenous gene.

Claim 101. (Previously Presented) A method for expressing a transcript containing exon I of a gene, said method comprising:

(a) transfecting one or more eukaryotic cells *in vitro* with the vector of any one of claims 58, 61, or 65;

(b) culturing said cells under conditions suitable for non-homologous integration of the vector into the genome of said cells; and

(c) culturing said cells under conditions suitable for expression of a transcript containing exon I from an endogenous gene, wherein said transcript is produced by means of a promoter on said vector.

Claim 102. (Currently Amended) A method for producing a gene product encoded by genomic DNA comprising:

(a) isolating genomic DNA, containing at least one gene, from a eukaryotic cell;

(b) transfecting the vector of any one of claims 58, 61, or 65 and said genomic DNA into a suitable eukaryotic host cell *in vitro* wherein the vector and genomic DNA are ligated or unligated; and

(c) culturing said host cell under conditions suitable to ligate said vector and genomic DNA and to result in transcription of one or more nucleic acid sequences of said genomic DNA by means of a promoter in said vector.

Claim 103. (Currently Amended) A method for isolating a gene sequence comprising:

(a) isolating genomic DNA, containing at least one gene, from a eukaryotic cell;

(b) transfecting the vector of any one of claims 58, 61, or 65 and said genomic DNA into a suitable eukaryotic host cell *in vitro* wherein the vector and genomic DNA are ligated or unligated;

(c) culturing said host cell under conditions suitable to ligate said vector and genomic DNA to result in transcription of one or more nucleic acid sequences of said genomic DNA by means of a promoter in said vector;

(d) isolating RNA produced by said transcription from said host cell;

(e) producing one or more cDNA molecules from said isolated RNA; and

(f) recovering one or more cDNA molecules containing vector sequences at the 5' ends of said cDNA molecules, thereby isolating said gene sequence.

Claim 104. (Previously Presented) The method of claim 102, wherein said vector further comprises one or more transposition signals, and wherein said vector is ligated to said isolated genomic DNA by *in vitro* transposition.

Claim 105. (Previously Presented) The method of claim 102, wherein said isolated genomic DNA is present in a cloning vector.

Claim 106. (Previously Presented) A method for producing a protein in a eukaryotic cell comprising:

(a) isolating genomic DNA from one or more cells;

(b) transfecting the vector of any one of claims 58, 61, or 65 and said genomic DNA into a eukaryotic cell *in vitro* wherein the vector and genomic DNA are ligated or unligated; and

(c) culturing said cell under conditions suitable to ligate said vector and genomic DNA to result in transcription of said genomic DNA by means of a promoter in said vector thereby resulting in protein expression from said genomic DNA.

Claim 107. (Previously Presented) The method of claim 106, wherein said eukaryotic cell is selected from a eukaryotic cell containing said transfected vector and genomic DNA prior to, during, or following being cultured under conditions suitable to result in protein expression.

Claim 108. (Previously Presented) The method of claim 105, wherein said cloning vector is selected from the group consisting of a BAC, a YAC, a PAC, a cosmid, a phage, and a plasmid.

Claim 109. (Previously Presented) The method of claim 106, further comprising isolating said protein.

Claims 110-112. (Canceled)

Claim 113. (Previously Presented) The vector construct of claim 70, wherein said positive selectable marker sequence is selected from the group consisting of a neomycin gene, a hypoxanthine phosphoribosyl transferase gene, a puromycin gene, a dihydrooratase gene, a glutamine synthetase gene, a histidine D gene, a carbamyl phosphate synthase gene, a dihydrofolate reductase gene, a multidrug resistance I gene, an aspartate transcarbamylase gene, a xanthine-guanine phosphoribosyl transferase gene, and an adenosine deaminase gene.

Claim 114. (Previously Presented) The vector construct of claim 70, wherein said negative selectable marker sequence is selected from the group consisting of a hypoxanthine phosphoribosyl transferase gene, a thymidine kinase gene, and a diphtheria toxin gene.

Claim 115. (Previously Presented) The vector of claim 70, wherein said negative selectable marker sequence is located upstream of said positive selectable marker.

Claim 116. (Previously Presented) The vector of claim 115, wherein said vector further comprises one or more selectable marker sequences.

Claim 117. (Canceled)

Claim 118. (Previously Presented) A vector construct comprising:

(a) a first promoter operably linked to a sequence encoding a positive selectable marker;

(b) a second promoter operably linked to a sequence encoding a negative selectable marker; and

(c) an unpaired splice donor site,

wherein said splice donor site is within said negative selectable marker and when said vector construct is integrated into the genome of a eukaryotic host cell and the vector-encoded splice donor is spliced to a splice acceptor in an endogenous gene in said genome, then said positive selectable marker sequence is expressed in active form and said negative selectable marker sequence is expressed in inactive form because of the splicing event.

Claim 119. (Previously Presented) A method for isolating exon I of a gene comprising:

(a) transfecting one or more eukaryotic cells *in vitro* with the vector of any one of claims 58, 61, or 65;

(b) culturing said cells under conditions suitable for non-homologous integration of the vector into the genome of said cells;

(c) selecting for cells in which said vector has transcriptionally activated an endogenous gene containing one or more exons;

(d) isolating RNA from said selected cells;

(e) producing cDNA from said isolated RNA;

(f) recovering a cDNA molecule containing vector sequence and exon sequence from said endogenous gene; and

(g) using the exon sequence in the endogenous gene to obtain genomic DNA containing exon I of the endogenous gene.

Claim 120. (Previously Presented) A eukaryotic cell *in vitro* that contains a vector non-homologously integrated into its genome, said vector comprising a first transcriptional regulatory sequence operably linked to a selectable marker lacking an operably-linked poly-adenylation signal, said vector further comprising a second transcriptional regulatory sequence operably linked to an unpaired splice donor sequence, wherein transcription of an endogenous gene is activated by said integrated second transcriptional regulatory sequence and the activated transcript is translated into protein.

Claim 121. (Previously Presented) A method for activating transcription and translation of an endogenous gene, said method comprising integrating a vector into the genome of a eukaryotic cell *in vitro*, said vector comprising a first transcriptional regulatory sequence operably linked to a selectable marker lacking an operably-linked poly-adenylation signal, said vector further comprising a second transcriptional regulatory sequence operably linked to an unpaired splice donor sequence, wherein transcription of an endogenous gene is activated by said integrated second transcriptional regulatory sequence and the activated transcript is translated into protein.